#15

1648

1648

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/214,701

DATE: 01/29/2002
TIME: 12:09:36

Input Set : D:\40646-20002.txt
Output Set: N:\CRF3\01292002\I214701.raw


```
 4 <110> APPLICANT: Lowell, George
 5       Vancott, Thomas
 6       Birx, Deborah
 8 <120> TITLE OF INVENTION: PROTEIN AND PEPTIDE VACCINES FOR
 9       INDUCING MUCOSAL IMMUNITY
11 <130> FILE REFERENCE: 40646-20002.00
13 <140> CURRENT APPLICATION NUMBER: US 09/214,701
14 <141> CURRENT FILING DATE: 1999-09-30
16 <150> PRIOR APPLICATION NUMBER: PCT/US 97/12253
17 <151> PRIOR FILING DATE: 1997-07-10
19 <150> PRIOR APPLICATION NUMBER: US 60/021,687
20 <151> PRIOR FILING DATE: 1996-07-10
22 <160> NUMBER OF SEQ ID NOS: 18
24 <170> SOFTWARE: FastSEQ for Windows Version 4.0
26 <210> SEQ ID NO: 1
27 <211> LENGTH: 868
28 <212> TYPE: PRT
29 <213> ORGANISM: Virus HIV-1
31 <400> SEQUENCE: 1
32 Met Ala Met Arg Ala Lys Gly Ile Arg Lys Asn Cys Gln His Leu Trp
33  1               5                  10                  15
34 Arg Trp Gly Thr Met Leu Leu Gly Met Leu Met Ile Cys Ser Ala Ala
35             20                  25                  30
36 Ala Asn Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp Lys Glu
37         35                  40                  45
38 Ala Thr Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr Asp Thr
39     50                  55                  60
40 Glu Ala His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr Asn Pro
41 65                  70                  75                  80
42 Asn Pro Gln Glu Val Val Leu Glu Asn Val Thr Glu Asn Phe Asn Met
43                 85                  90                  95
44 Trp Lys Asn Asn Met Val Glu Gln Met His Glu Asp Ile Ile Ser Leu
45             100                 105                 110
46 Trp Asp Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu Cys Val
47         115                 120                 125
48 Thr Leu Asn Cys Thr Asp Leu Asn Thr Asn Asn Thr Thr Asn Thr Thr
49     130                 135                 140
50 Glu Leu Ser Ile Ile Val Val Trp Glu Gln Arg Gly Lys Gly Glu Met
51 145                 150                 155                 160
52 Arg Asn Cys Ser Phe Asn Ile Thr Thr Ser Ile Arg Asp Lys Val Gln
53                 165                 170                 175
54 Arg Glu Tyr Ala Leu Phe Tyr Lys Leu Asp Val Glu Pro Ile Asp Asp
55             180                 185                 190
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```
56 Asn Lys Asn Thr Thr Asn Asn Thr Lys Tyr Arg Leu Ile Asn Cys Asn
57          195                 200                 205
58 Thr Ser Val Ile Thr Gln Ala Cys Pro Lys Val Ser Phe Glu Pro Ile
59      210                 215                 220
60 Pro Ile His Tyr Cys Thr Pro Thr Gly Phe Ala Leu Leu Lys Cys Asn
61 225                 230                 235                 240
62 Asp Lys Lys Phe Asn Gly Thr Gly Pro Cys Thr Asn Val Ser Thr Val
63                  245                 250                 255
64 Gln Cys Thr His Gly Ile Arg Pro Val Val Ser Thr Gln Leu Leu Leu
65              260                 265                 270
66 Asn Gly Ser Leu Ala Glu Glu Glu Val Val Ile Arg Ser Glu Asn Phe
67          275                 280                 285
68 Thr Asn Asn Ala Lys Thr Ile Ile Val Gln Leu Asn Val Ser Val Glu
69      290                 295                 300
70 Ile Asn Cys Thr Arg Pro Asn Asn His Thr Arg Lys Arg Val Thr Leu
71 305                 310                 315                 320
72 Gly Pro Gly Arg Val Trp Tyr Thr Thr Gly Glu Ile Leu Gly Asn Ile
73                  325                 330                 335
74 Arg Gln Ala His Cys Asn Ile Ser Arg Ala Gln Trp Asn Asn Thr Leu
75              340                 345                 350
76 Gln Gln Ile Ala Thr Thr Leu Arg Glu Gln Phe Gly Asn Lys Thr Ile
77          355                 360                 365
78 Ala Phe Asn Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Met His Ser
79      370                 375                 380
80 Phe Asn Cys Gly Gly Glu Phe Phe Tyr Cys Asn Ser Thr Gln Leu Phe
81 385                 390                 395                 400
82 Asn Ser Ala Trp Asn Val Thr Ser Asn Gly Thr Trp Ser Val Thr Arg
83                  405                 410                 415
84 Lys Gln Lys Asp Thr Gly Asp Ile Ile Thr Leu Pro Cys Arg Ile Lys
85              420                 425                 430
86 Gln Ile Ile Asn Arg Trp Gln Val Val Gly Lys Ala Met Tyr Ala Leu
87          435                 440                 445
88 Pro Ile Lys Gly Leu Ile Arg Cys Ser Ser Asn Ile Thr Gly Leu Leu
89      450                 455                 460
90 Leu Thr Arg Asp Gly Gly Gly Glu Asn Gln Thr Thr Glu Ile Phe Arg
91 465                 470                 475                 480
92 Pro Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys
93                  485                 490                 495
94 Tyr Lys Val Val Lys Ile Glu Pro Leu Gly Val Ala Pro Thr Lys Ala
95              500                 505                 510
96 Lys Arg Arg Val Val Gln Arg Glu Lys Arg Ala Val Gly Met Leu Gly
97          515                 520                 525
98 Ala Met Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met Gly Ala
99      530                 535                 540
100 Thr Ser Met Ala Leu Thr Val Gln Ala Arg Gln Leu Leu Ser Gly Ile
101 545                 550                 555                 560
102 Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Lys Ala Gln Gln His
103                 565                 570                 575
104 Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln Leu Gln Ala Arg Ile
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```
105             580                 585                 590
106 Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln Gln Leu Leu Gly Phe Trp
107         595                 600                 605
108 Gly Cys Ser Gly Lys Leu Ile Cys Thr Thr Ala Val Pro Trp Asn Ala
109     610                 615                 620
110 Ser Trp Ser Asn Lys Thr Leu Asp Gln Ile Trp Asn Asn Met Thr Trp
111 625                 630                 635                 640
112 Met Glu Trp Asp Arg Glu Ile Asp Asn Tyr Thr His Leu Ile Tyr Thr
113                 645                 650                 655
114 Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn Gln Gln Glu Leu
115             660                 665                 670
116 Leu Gln Leu Asp Lys Trp Ala Ser Leu Trp Thr Trp Ser Asp Ile Thr
117         675                 680                 685
118 Lys Trp Leu Trp Tyr Ile Lys Ile Phe Ile Met Ile Val Gly Gly Leu
119     690                 695                 700
120 Ile Gly Leu Arg Ile Val Phe Ala Val Leu Ser Ile Val Asn Arg Val
121 705                 710                 715                 720
122 Arg Gln Gly Tyr Ser Pro Leu Ser Phe Gln Thr Leu Leu Pro Asn Pro
123                 725                 730                 735
124 Arg Gly Pro Asp Arg Pro Glu Gly Thr Glu Glu Gly Gly Gly Glu Arg
125             740                 745                 750
126 Gly Arg Asp Gly Ser Thr Arg Leu Val His Gly Phe Leu Ala Leu Val
127         755                 760                 765
128 Trp Asp Asp Leu Arg Ser Leu Cys Leu Phe Ser Tyr His Arg Leu Arg
129     770                 775                 780
130 Asp Leu Leu Leu Ile Val Ala Arg Ile Val Glu Leu Leu Gly Arg Arg
131 785                 790                 795                 800
132 Gly Trp Glu Val Leu Lys Tyr Trp Trp Asn Leu Leu Gln Tyr Trp Ser
133                 805                 810                 815
134 Gln Glu Leu Lys Asn Ser Ala Val Ser Leu Val Asn Val Thr Ala Ile
135             820                 825                 830
136 Ala Val Ala Glu Gly Thr Asp Arg Val Ile Glu Val Val Gln Arg Ile
137         835                 840                 845
138 Tyr Arg Ala Phe Leu His Ile Pro Arg Arg Ile Arg Gln Gly Phe Glu
139     850                 855                 860
140 Arg Ala Leu Leu
141 865
143 <210> SEQ ID NO: 2
144 <211> LENGTH: 5
145 <212> TYPE: PRT
146 <213> ORGANISM: Artificial Sequence
148 <220> FEATURE:
149 <223> OTHER INFORMATION: Hydrophobic peptide added to the terminus of the
150       antigenic peptide
152 <400> SEQUENCE: 2
153 Phe Leu Leu Ala Val
154  1               5
156 <210> SEQ ID NO: 3
157 <211> LENGTH: 5
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Input Set : D:\40646-20002.txt
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<210> SEQ ID NO: 3
<211> LENGTH: 5
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Hydrophobic peptide added to the terminus of the antigenic peptide
<400> SEQUENCE: 3
Val Ala Leu Leu Phe
1 5
<210> SEQ ID NO: 4
<211> LENGTH: 10
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Hydrophobic decapeptide
<400> SEQUENCE: 4
Gly Gly Tyr Cys Phe Val Ala Leu Leu Phe
1 5 10
<210> SEQ ID NO: 5
<211> LENGTH: 68
<212> TYPE: PRT
<213> ORGANISM: P. falciparum
<400> SEQUENCE: 5
Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15
Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
20 25 30
Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
35 40 45
Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val Asp Pro
50 55 60
Asn Val Asp Pro
65
<210> SEQ ID NO: 6
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic linker
<400> SEQUENCE: 6
gatcccgggt gactgactga 20
<210> SEQ ID NO: 7
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic linker
<400> SEQUENCE: 7
gatctcagtc agtcacccgg 20
<210> SEQ ID NO: 8

RAW SEQUENCE LISTING DATE: 01/29/2002
PATENT APPLICATION: US/09/214,701 TIME: 12:09:36

Input Set : D:\40646-20002.txt
Output Set: N:\CRF3\01292002\I214701.raw

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221 <211> LENGTH: 16
222 <212> TYPE: PRT
223 <213> ORGANISM: Artificial Sequence
225 <220> FEATURE:
226 <223> OTHER INFORMATION: Synthetic oligopeptide
228 <400> SEQUENCE: 8
229 Gly Asn Val Gln Ala Ala Lys Asp Gly Gly Asn Thr Ala Ala Gly Arg
230  1               5                  10                  15
232 <210> SEQ ID NO: 9
233 <211> LENGTH: 16
234 <212> TYPE: PRT
235 <213> ORGANISM: Artificial Sequence
237 <220> FEATURE:
238 <223> OTHER INFORMATION: Trypanosomal peptide pepG
240 <400> SEQUENCE: 9
241 Tyr Gly Gly Gly Cys Thr Gln Ile Thr Glu Pro Thr Cys Asn Ser Ser
242  1               5                  10                  15
244 <210> SEQ ID NO: 10
245 <211> LENGTH: 10
246 <212> TYPE: PRT
247 <213> ORGANISM: Artificial Sequence
249 <220> FEATURE:
250 <223> OTHER INFORMATION: Trypanosomal peptide pepM1
252 <400> SEQUENCE: 10
253 Tyr Gly Val Pro Val Ala Thr Gln Thr Gly
254  1               5                  10
256 <210> SEQ ID NO: 11
257 <211> LENGTH: 12
258 <212> TYPE: PRT
259 <213> ORGANISM: Artificial Sequence
261 <220> FEATURE:
262 <223> OTHER INFORMATION: Trypanosomal peptide pepCM1
264 <400> SEQUENCE: 11
265 Cys Tyr Gly Val Pro Val Ala Gln Thr Gln Thr Gly
266  1               5                  10
268 <210> SEQ ID NO: 12
269 <211> LENGTH: 30
270 <212> TYPE: PRT
271 <213> ORGANISM: Artificial Sequence
273 <220> FEATURE:
274 <223> OTHER INFORMATION: Trypanosomal peptide pepCM3
276 <400> SEQUENCE: 12
277 Cys Tyr Gly Val Pro Val Ala Gln Thr Gln Thr Gly Val Pro Val Ala
278  1               5                  10                  15
279 Gln Thr Gln Thr Gly Val Pro Val Ala Gln Thr Gln Thr Gly
280             20                  25                  30
282 <210> SEQ ID NO: 13
283 <211> LENGTH: 47
284 <212> TYPE: PRT
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VERIFICATION SUMMARY DATE: 01/29/2002
PATENT APPLICATION: US/09/214,701 TIME: 12:09:37

Input Set : D:\40646-20002.txt
Output Set: N:\CRF3\01292002\I214701.raw